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Corema in New Jersey.

By JOHN H. REDFIELD.

In an article upon the localities of *Corema Conradii* which appeared in the BULLETIN for Sept., 1884, (Vol. xi. p. 97) I referred to a locality of this plant at Cedar Bridge, N. J., which was known to Rafinesque, and which was visited by Dr. Torrey in 1833, who described the plant and defined its Cedar Bridge station, in the Annals of N. Y. Lyceum of Natural History, Vol. iv. p. 83. I also gave some account of an unsuccessful search for the plant at Cedar Bridge made by the late Chas. F. Parker and myself in April, 1869. In a short account of that search given in Proc. Phil. Acad. Nat. Sci. for 1869, pp. 91, 92, I stated that if the plant "is again to be discovered in New Jersey, it will probably be in the wide sandy waste a few miles west of Cedar Bridge, near the boundary between Burlington and Ocean counties, where a succession of elevated ancient ocean beaches offer conditions similar to those of Cape Cod." But up to the date of my paper of 1884, and for several years thereafter, the *Corema* had seemed lost to New Jersey, and the locality at Lake Minnewaska on the Shawangunk Ridge in Ulster Co., N. Y.—made known by Aubrey H. Smith in 1881—was regarded as the most southern point which could be surely cited for the habitat of this plant.

About three years ago Mr. F. J. H. Merrill of Columbia College, in the course of an examination of the Yellow Drift of Ocean Co. N. J., discovered the *Corema* in the very region which I had indicated in my communication to the Philadelphia Academy in 1869, and reported the fact to Dr. Britton, who visited the locality with Messrs. Thos. Hogg and J. I. Northrop in May, 1887. In April of this present year Dr. Britton proposed that I should join him in an expedition to the place. Accordingly on the 30th. Dr. Britton, with Mr. Arthur Hollick, Dr. J. Bernard Brinton and myself visited the location, which is about two and one-half miles due west from Cedar Bridge, and about ten miles west of the R. R. station at Barnegat. It lies on both sides of the county line dividing Ocean and Burlington counties. It is easiest reached from Barnegat, by taking the straight road from that place to Cedar Bridge (about eight miles) then taking the straight road

running west-northwest from Cedar Bridge toward Buddstown, for about two and one-half miles to where that road is crossed by a north and south road, and following this for half or two thirds of a mile south.

The region is a most remarkable one, which cannot fail to impress every visitor with a sense of loneliness and sterility. It forms part of the water-shed or divide between the streams flowing into the Atlantic and those discharging into the Delaware river. Locally it is known as the "West Plains," but these so-called "plains" are long undulating swells of sand, sometimes rising to a height commanding extensive views in every direction over a desert of sand so sterile that even the trees of *Pinus rigida*, which sparsely clothe it, can attain only to the height of three or four feet. No sign of human life is visible, and one could readily imagine himself in the midst of a vast wilderness. Its height above the ocean is between 150 and 200 feet, according to the Geological Survey. The region is bisected by the north and south road I have mentioned, by the side of which the usual low matted patches of the *Corema* appear. But on leaving the road to examine the extent of its distribution we became amazed at the expanse of territory more or less covered by it. We followed over the rising swells of ground already alluded to, both to the east and west of the road to the extent of at least half a mile each way, and for a like distance in the opposite direction, without entirely losing sight of the *Corema*, and we probably did not reach its limits. To say that there are hundreds of acres of it is a statement which my companions thought to be far short of the truth. In some places the patches were separated by intervals of some rods, but oftener scores of them were seen at once, and in many places they became confluent in large masses, reminding one of the appearance of the plant at Plymouth, Mass. Besides the thinly scattered stunted pines, little shrubbery was seen other than occasional very small specimens of *Quercus ilicifolia*, but the sandy spaces were often partially covered with *Arctostaphylos* *Uva-ursi*, and the whole region reminded one of the downs of the interior of Nantucket, where the *Arctostaphylos* is so very abundant. Occasional carpets of *Pyxidanthera* were near, but rarely with the *Corema*. Though our visit was made before April had expired, the unusually ad-

vanced season had carried the *Corema* beyond its flowering stage, and its stamens were mostly withered, though not fallen. Staminate and pistillate plants seemed equally abundant.

When Mr. Merrill first discovered this locality, it was, I believe, unscathed by fire, but at the time of Dr. Britton's first visit the region had been burned over, so far as it was possible to burn so sparse a growth, and the low pines had been singed and mostly killed. Now among the blackened trunks fresh sprouts of these pines are appearing. But what most excited our surprise was to see myriads of young seedling plants of the *Corema* springing out of the sand, in the intervals between the patches, and it would seem as if the seeds carried by the winds had availed themselves of every spot of bare sand, there to lodge and germinate. None of these seedlings were more than two years old, many not more than one. In none of the many localities of *Corema* which I have visited do I remember to have seen such seedlings, except upon the summit of Isle au Haut on the coast of Maine, where the ground had been burned over in like manner.

In illustration of the apparently capricious manner in which this plant appears, I may mention that on our return to Barnegat we saw two or three patches of it on the south side of the road about three miles west of Barnegat, within half a yard of the wheel-track. Search for more of it in this vicinity was unsuccessful, so also was a re-examination of the original locality near the old western hotel at Cedar Bridge.

We may now restore the *Corema* to the Flora of New Jersey, with the assurance that this, its most southern locality yet known, can furnish enough of it to supply the botanists of the world for long to come.*

*The following letter, addressed to me by Dr. Willis in answer to an inquiry, indicates that careful search might reveal still additional localities. N. L. B.

WHITE PLAINS, Nov. 7, 1884.

MY DEAR SIR :

Yours of the 3d. to hand. We found *Corema* west of Tom's River—and north of Manchester. Also west of *Squam*, south of the river. It was not rare in those neighborhoods. It is though, at least thirty years since I visited them, and the localities have perhaps been exhausted. Dr. Torrey was accustomed to say that civilization was destined to destroy botany.

Cordially,

O. R. WILLIS.